

Bias-Variance and Cross Validation

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As depth increases, train accuracy improves

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As depth increases, test accuracy improves till a point

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At very high depths, test accuracy is not good
(overfitting).

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Why can't we directly optimize for test error?

Key Takeaways

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- **Model Selection:** Choose complexity that balances bias and variance
- **No Free Lunch:** Cannot reduce both bias and variance simultaneously

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